Cisco 7200 Series

This chapter provides information on the new Cisco 7200 series routers. The Cisco 7200 series includes the Cisco 7206, which is available now, and the Cisco 7204, which will be available in Q3 1996. The information is organized into the following sections:

- Product Overview
- Standard Features
- Options
  - Network Processing Engine
  - Input/Output Controller
  - Port Adapters
  - Spare Chassis
  - Power Supplies
  - Spare Accessories
  - Software Options

Note Documentation for the Cisco 7200 series is available in two forms: on a CD-ROM called Cisco Connection Documentation, Enterprise Series (formerly called UniverCD) and printed books. You can request a free copy of the documentation CD when you place an order and have the option of subscribing to a CD update service. Installation documentation ships with each chassis, and a configuration note ships with each component ordered. All configuration notes are available on the CD.

You can also access Cisco technical documentation on the World Wide Web URL http://www.cisco.com. For more information, see the chapter “Documentation” at the end of the catalog.

Product Overview

The Cisco 7200 series routers provide routing and bridging for a wide variety of protocols and network media and include the Cisco 7206 and the Cisco 7204 (available in Q3 1996). Network interfaces reside on port adapters that provide a connection between the router's Peripheral Component Interconnect (PCI) buses and external networks.

The Cisco 7200 series combines Cisco Systems' proven software technology with exceptional reliability, availability, serviceability, and performance features to meet the requirements of today's most mission-critical internetworks. The Cisco 7200 series provides information system professionals with the flexibility they need to meet the constantly changing requirements at the core and distribution points of the internetwork.

The Cisco 7200 series runs the industry-leading networking software, Cisco Internetwork Operating System (Cisco IOS) software. Cisco IOS software assures robust, reliable internetworks by supporting both LAN and WAN protocols, optimizing WAN services, and controlling internetwork access. In addition, Cisco IOS software allows centralized, integrated, and automated installation and management of internetworks.

The Cisco 7200 series offers software feature sets and feature licenses, which allows you to select the package that best meets your needs. You can select from four feature sets, one of which is required. The feature sets can be enhanced with additional feature licenses, which are required to use specific features with subsets. If requirements change in the future, you can upgrade to a higher level feature set and add another feature license.

The Cisco 7204 (available Q3 1996) will contain four slots for port adapters and two slots for Personal Computer Memory Card International Association (PCMCIA) Flash memory cards.

The Cisco 7206 contains six slots for port adapters and two slots for PCMCIA Flash memory cards. The port adapter types follow:

- 10BaseT Ethernet
- Fast Ethernet
- FDDI
- Serial
- Token Ring

The Cisco 7200 series routers also contain a slot for an input/output (I/O) controller. The I/O controller can be purchased with or without Fast Ethernet support. The Fast Ethernet input/output controller includes an MII connector.

The reliability, availability, and serviceability features of the Cisco 7200 series include the following:

- Online software reconfiguration—Enables software configuration changes to occur without rebooting or interrupting network applications and services.
- Online insertion and removal (OIR)—Allows seamless upgrades to higher density and new port adapters without rebooting or taking the system offline. Reduces operator intervention because like port adapters are automatically reconfigured.

- Fast boot—Enables the system to come online quickly (35 seconds is typical) after software upgrades, minimizing impact on the network.
- Environmental monitoring—Alerts you to fluctuations before critical conditions occur, allowing proactive resolution while the system stays online.
- Self-diagnostics and tools—Ensures that modules are operational before going online, eliminating potential network problems.
- Optional dual power supply systems, AC- or DC-input—Extends individual power supplies by load sharing.

  Allows you to implement dual sources of primary power. Each supply has its own power cord, eliminating the risks associated with failure of uninterruptable power supply systems or building power.
- Flash memory—Enables fast, reliable software and microcode updates. Allows a single, centralized point of administration, eliminating the need to visit each router site when updating software or microcode.

Figure 14 Cisco 7206 Front View

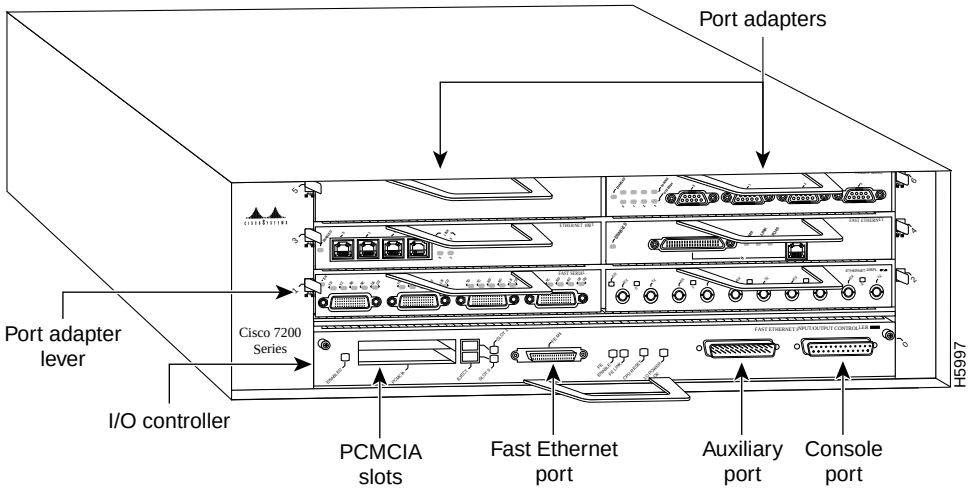


Figure 15 Cisco 7206 Rear View

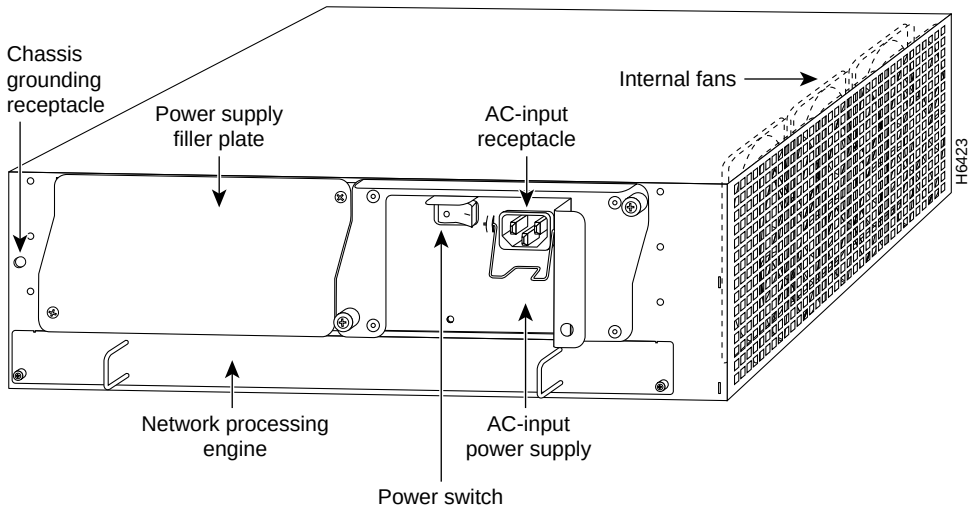


Table 83 Cisco 7200 Series Summary of Features

Characteristics	Cisco 7206	Cisco 7204[1]
Supported network interfaces	Ethernet 10BaseT Fast Ethernet (100BaseT and MII) Token Ring FDDI Serial	Ethernet 10BaseT Fast Ethernet (100BaseT and MII) Token Ring FDDI Serial
Power supplies	2[2]	2[2]
Port adapter slots	6	4
Input/output controller	With or without Fast Ethernet	With or without Fast Ethernet
Software options—choice of four Cisco IOS software feature sets	Enterprise Enterprise and APPN Desktop and IBM Network Layer 3 Switching	Enterprise Enterprise and APPN Desktop and IBM Network Layer 3 Switching
PCMCIA Flash memory card (optional, 2 slots available)	8 MB expandable to 40 MB (8, 16, or 20 MBs per card)	8 MB expandable to 40 MB (8, 16, or 20 MBs per card)
Processor type	MIPS RISC	MIPS RISC
Dimensions (H x W x D)	5.25 x 16.8 x 17" (13.34 x 42.67 x 43.18 cm)	5.25 x 16.8 x 17" (13.34 x 42.67 x 43.18 cm)
Weight	Chassis fully configured with a network processing engine, I/O controller, six port adapters, two power supplies, and a fan tray: ~ 50 lbs (22.7 kg)	–
High-speed midplane	6 port adapters	4 port adapters

1. Available Q3 1996,
2. Second power supply is optional.

Table 84 Cisco 7206 Environmental Specifications

Description	Specification
Midplane	Three PCI buses with an aggregate bandwidth of 1.6 Gbps[1]
Power dissipation	~370W maximum configuration
Heat dissipation	370W (1262 Btu[2])
AC-input power	370W maximum (single or dual power supply configuration)
AC-input voltage	100-240 VAC[3] wide input with power factor correction (PFC)
AC-input rating	5A maximum @ 110 VAC and 2.5A maximum @ 240 VAC with the chassis fully configured
AC-input cable	18 AWG [4] three-wire cable, with three-lead IEC-320 receptacle on the power supply end, and a country-dependent plug on the power source end
DC-output power[5]	280W maximum (single or dual power supply configuration)
DC-input power[5]	370W maximum (single or dual power supply configuration)
DC-input voltage	–48 VDC[6] nominal in North America –60 VDC maximum in the European Community
DC-input current rating	14A maximum at –48 VDC
DC voltages supplied and a maximum steady-state current ratings	+5.2V @ 360A +12.2V @ 9A -12.0V @ 1.5A +3.5V @ 13A
DC-input cable[5]	14 AWG recommended minimum. with at least three conductors rated for at least 140 F (60 C)
Frequency	50/60 Hz
Airflow	~80 cfm[7]
Temperature	32 to 104 F (0 to 40 C), operating; –4 to 149 F (–20 to 65 C), nonoperating
Humidity	10 to 90% noncondensing
Agency approvals	Safety: UL 1950, CSA 22.2 No. 950, EN60950, EN41003, AUSTEL TS001, AS/NZ 3260 EMI: FCC Class A, CSA Class A, EN55022 Class B, VCCI Class 2, AS/NRZ 3548 Class A Immunity: IEC-1000-4-2, IEC-1000-4-3, IEC-1000-4-4, IEC-1000-4-5, IEC-1000-4-6, IEC-1000-4-11, IEC-1000-3-2
Software requirement	Cisco IOS Release 11.1(472) or later

1. Gbps = gigabits per second.
2. BTU = British thermal units.
3. VAC = volts alternating current.
4. AWG = American Wire Gauge.
5. Available Q3 1996.
6. VDC = volts direct current.
7. cfm = cubic feet per minute.

Standard Features

The Cisco 7200 series base system includes the following standard features:

- System chassis
- Four slots for port adapters in the Cisco 7204; six slots for port adapters in the Cisco 7206
- Subchassis (including the midplane)
- AC-input power supply
- AC power cord

You must order the other major system components separately. These components include the network processing engine, input/output controller, DRAM and PCMCIA memory, port adapters, dual power supplies, and Cisco IOS software. See the section "Configuration Worksheets" in the chapter "Configuration Guidelines for the Cisco 7000 Family" for more details.

Table 85 lists the Cisco 7206 base system product numbers.

Table 85 Cisco 7206 Base System Product Numbers

Description	Product Number
Cisco 7206, 6-slot chassis, 1 AC-input power supply	CISCO7206
Cisco 7206, 6-slot chassis, 1 DC-input power supply[1]	CISCO7206-DC

1. Available Q3 1996.

Table 86 lists the Cisco 7204 base system product numbers.

Note The Cisco 7204 will be available Q3 1996.

Table 86 Cisco 7204 Base System Product Numbers

Description	Product Number
Cisco 7204, 4-slot chassis, 1 AC-input power supply[1]	CISCO7204
Cisco 7204, 4-slot chassis, 1 DC-input power supply[2]	CISCO7204-DC

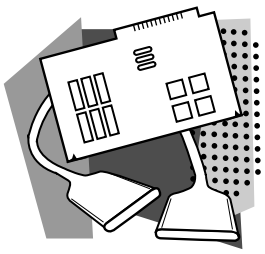
1. Available Q3 1996.

Field-Replaceable Units

The Cisco 7200 series routers are easily serviced; all major components are field replaceable units (FRUs). The following Cisco 7200 series components are FRUs:

- Network processing engine
- Input/output controller

- Memory—DRAM and PCMCIA
- Port adapters
- Power supplies
- Fan tray
- Subchassis (including the midplane)
- Chassis



Options

Options for the Cisco 7200 series include port adapters, memory, serial cables, software feature sets, software feature licenses, a second power supply, accessories, and upgrades for the network processing engine.

Note For additional options that apply to most systems, refer to the chapters “Cables and Transceivers” or “Power Cords” in Part 7.

Network Processing Engine

The network processing engine maintains and executes the system management functions for the Cisco 7200 series routers. The network processing engine also shares the system memory and environmental monitoring functions for the router with the I/O controller.

The Cisco 7200 series requires one network processing engine, which can be ordered in three ways: as part of an initial system, as a spare, or as an upgrade. The network processing engine can be ordered with your choice of 16-, 24-, 32-, 64-, or 128-MB DRAM. The default is 16-MB. The network processing engine consists of the following components:

- Orion/R4700 RISC processor operating at an internal clock speed of 150 MHz and an external clock speed of 75 MHz.
- Galileo GT-64010 system controller that uses DMA to transfer data between port adapters on two PCI buses, and DRAM and packet SRAM on the network processing engine.
- DRAM for storing routing tables, protocols, network accounting applications, packets of information in preparation for process switching, and packet buffering for SRAM overflow. The standard configuration is 16 MB, with up to 128 MB available through SIMM upgrades.
- Packet SRAM (1-MB) for storing packets of information in preparation for fast switching.
- Unified cache SRAM that functions as the secondary cache for the R4700 RISC processor. (The primary cache is within the processor.)
- Environmental sensor for monitoring the air temperature in the proximity of the CPU.

The network processing engine performs the following system management functions:

- Sending and receiving routing protocol updates
- Managing tables, caches, and buffers
- Monitoring interface and environmental status
- Providing Simple Network Management Protocol (SNMP) management and the console/Telnet interface
- Data traffic accounting and switching
- Image booting and reloading
- Port adapter management (recognition and initialization during OIR)

Table 87 lists network processing engine product numbers, and Table 88 lists network processing engine DRAM upgrade product numbers.

Table 87 Cisco 7200 Series Network Processing Engines

Description	Product Numbers
Cisco 7200 network processing engine, 150 MHz, 16-MB DRAM	NPE-150
Cisco 7200 network processing engine, 150 MHz, 16-MB DRAM (spare)	NPE-150=

Table 88 Cisco 7200 Series Network Processing Engine DRAM Upgrade Options

Description	Product Number	SIMM Quantity	SIMM Size
8-MB DRAM upgrade kit	MEM-NPE-8MB=[1]	2	4-MB SIMMs
16-MB DRAM upgrade kit	MEM-NPE-16MB	2	8-MB SIMMs
16-MB DRAM upgrade kit (spare)	MEM-NPE-16MB=[1]	2	8-MB SIMMs
24-MB DRAM upgrade kit	MEM-NPE-24MB[2]	2 2	8-MB SIMMs 4-MB SIMMs
32-MB DRAM upgrade kit	MEM-NPE-32MB	2	16-MB SIMMs
32-MB DRAM upgrade kit (spare)	MEM-NPE-32MB=[1]	2	16-MB SIMMs
64-MB DRAM upgrade kit	MEM-NPE-64MB	2	32-MB SIMMs
64-MB DRAM upgrade kit (spare)	MEM-NPE-64MB=[1]	2	32-MB SIMMs
128-MB DRAM upgrade kit	MEM-NPE-128MB	4	32-MB SIMMs
128-MB DRAM upgrade kit (spare)	MEM-NPE-128MB=[1]	4	32-MB SIMMs

1. By default, spare processors ship with an 8-MB PCMCIA Flash memory card, which is unformatted and does not contain a Cisco IOS software image.
2. A spare 24-MB DRAM upgrade kit is not available.

Table 89 summarizes the components of the network processing engine.

Table 89 Cisco 7200 Network Processing Engine Memory Components

Type	Size	Quantity	Description
DRAM	16 to 128 MB	2 to 4	4-, 8-, 16-, or 32-MB SIMMs (based on maximum DRAM required)
SRAM	1 MB	8	Eight chips each being 128K words x 72 bits wide
Unified cache	512 KB	4	Secondary cache for the R4700 RISC processor

Input/Output Controller

Input/output controllers share the system memory functions and the environmental monitoring functions for the Cisco 7200 series routers with the network processing engine.

The I/O controller consists of the following components:

- Dual EIA/TIA-232 channels for local console and auxiliary ports
- One Fast Ethernet port with a single female MII receptacle configurable to 100 Mbps
- NVRAM for storing system configuration and environmental monitoring logs
- Two PCMCIA slots
- Flash memory SIMM and Flash memory cards
- EPROM to boot the Cisco IOS software
- Environmental exhaust sensor

Table 90 Cisco 7200 Series Input/Output Controllers

Description	Product Number
Fast Ethernet (100BaseT) input/output controller	CONTRL-I/O-FE-TX
Fast Ethernet (100BaseT) input/output controller (spare)	CONTRL-I/O-FE-TX=
Input/output controller[1]	CONTRL-I/O
Input/output controller (spare)[2]	CONTRL-I/O=

1. Available Q3 1996 for both the Cisco 7206 and the Cisco 7204. The CONTROL-I/O is an input/output controller without a Fast Ethernet port.

Flash Memory Cards

Flash memory cards can be used to store and boot Cisco IOS images and/or system configurations. A Cisco 7200 series router can also be used as a TFTP server, with the Flash card memory used to store other files such as software and microcode images for other systems. Cisco recommends using one card for image storage, and another for configurations. The number of system images that can be stored on the card depends both on the Flash card size and the file size.

The Flash memory card is available in 8-, 16-, or 20-MB densities. The card is an Intel Series 2+ Flash memory card, which conforms with the PCMCIA format. The Flash memory card that is shipped with the system contains a software image; the same Flash memory card that is ordered as a spare is shipped blank and must be formatted before use. Table 91 provides a description of each Cisco 7200 series Flash memory card along with its corresponding product number.

Table 91 Cisco 7200 Series Flash Memory Cards

Description	Product Number
8-MB PCMCIA Flash memory card (default)	MEM-NPE-FLC8M
8-MB PCMCIA Flash memory card (spare)[1]	MEM-NPE-FLC8M=
16-MB PCMCIA Flash memory card	MEM-NPE-FLC16M
16-MB PCMCIA Flash memory card (spare)[1]	MEM-NPE-FLC16M=
20-MB PCMCIA Flash memory card	MEM-NPE-FLC20M
20-MB PCMCIA Flash memory car (spare)[1]	MEM-NPE-FLC20M=

1. Spares are shipped blank and unformatted.

Port Adapters

Interface support for the Cisco 7200 series is provided by port adapters installed in port adapter slots 1 through 6 for the Cisco 7206, and 1 through 4 for the Cisco 7204. Table 92 lists the available port adapters.

Note The Cisco 7200 series routers and the VIP2 interface processor for the Cisco 7000 series and Cisco 7500 series routers use the same port adapters.

Table 92 Cisco 7200 Series Port Adapters

Description	Product Number
4 Ethernet 10BaseT ports	PA-4E
8 Ethernet 10BaseT ports	PA-8E
1 Fast Ethernet port	PA-FE-TX PA-FE-FX
4 synchronous serial ports supporting EIA/TIA-232, EIA/TIA-449, EIA-530, X.21, and V.35	PA-4T
4 Token Ring ports	PA-4R
5 Ethernet 10BaseFL ports	PA-5EFL
1 FDDI multimode port	PA-FDDI-MM
1 FDDI single-mode port	PA-FDDI-SM

Spare Chassis

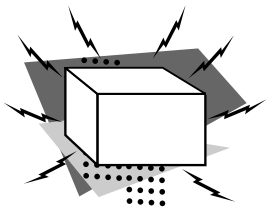
Table 93 lists spare chassis assemblies for the Cisco 7200 series routers.

Note The Cisco 7204 and related product numbers will be available Q3 1996.

Table 93 Cisco 7200 Series Chassis Assemblies

System[1]	Product Number
Cisco 7206, 6-slot chassis, 1 AC-input power supply	CISCO7206
Cisco 7206, 6-slot chassis, 1 DC-input power supply[2]	CISCO7206-DC
Cisco 7204, 4-slot chassis, 1 AC-input power supply[2]	CISCO7204
Cisco 7204, 4-slot chassis, 1 DC-input power supply[2]	CISCO7204-DC

1. Each order must include a software feature set.
2. Available Q3 1996.



Power Supplies

Table 94 provides product numbers for single power supplies ordered as part of an initial system or a spare. Power supplies for United States and international use are listed. For international spare AC-input power supply orders, Cisco uses country-specific product numbers, which specify the type of power cord to be included in the order.

Table 94 Cisco 7200 Series Single Power Supplies

Description	Product Numbers
AC-input power supply for United States	PWR-7200-AC=
AC-input power supply for Australia	PWR-7200-ACA=
AC-input power supply for Europe	PWR-7200-ACE=
AC-input power supply for Italy	PWR-7200-ACI=
AC-input power supply for United Kingdom	PWR-7200-ACU=
DC-input power supply [1,2]	PWR-7200-DC
DC-input power supply (spare)[1,2]	PWR-7200-DC=

1. DC-input power supplies do not include a power cord.
2. Available Q3 1996.

The Cisco 7200 series supports dual power supplies. The optional additional power supply system provides dual load-sharing for protection against system interruption should one power supply system or one source of power fail. Table 95 provides product numbers for dual power supplies that are ordered as part of an initial system.

Note Dual power supplies must both be AC-input or DC-input. The Cisco 7200 series does not support mixed power supply types.

Table 95 Cisco 7200 Series Dual Power Supplies

Description	Product Numbers
Dual AC-input power supply	PWR-7200/2
Dual DC-input power supply[1,2]	PWR-7200/2-DC

1. DC-input power supplies do not include a power cord.
2. Available Q3 1996.

Spare Accessories

Several spare accessories are available for the Cisco 7200 series: a rack-mount kit, cable-management bracket, packing material, power supply covers, fans, midplane assemblies, blank card carriers, and a port adapter divider. Table 96 lists spare accessories.

Table 96 Cisco 7200 Series Accessories

Product	Description	Product Number
Rack-mount kit	Cisco 7200 rack-mount kit	ACS-7200-RMK=
Cable-management bracket	Cisco 7200 cable-management bracket (spare)	ACS-7200-CBLM=
Spare packaging	Cisco 7200 spare system packaging material	PKG-7200=
Redundant power supply cover	Cisco 7200 redundant power supply cover	MAS-7200PSCOVER=
Fan assembly	Cisco 7200 fan tray assembly (spare)	MAS-7200FAN=
Midplane assembly	Cisco 7206 midplane assembly (spare)	MAS-7206MP=
Midplane assembly[1]	Cisco 7204 midplane assembly (spare)	MAS-7204MP=
Blank card carrier	Cisco 7200 blank card carrier	MAS-72KBLANK
Blank card carrier, spare	Cisco 7200 blank card carrier (spare)	MAS-72KBLANK=
Slot divider	CIsco 7200 port adapter divider	MAS-72KSLOTDIV=

1. Available Q3 1996.

Software Options

This section describes Cisco IOS software feature sets for the Cisco 7200 series routers. With feature sets, you can order software combinations that support your particular application. Optional licenses expand the feature sets by providing WAN packet protocol, interdomain routing, and NetFlow software. (NetFlow software will be available in Q3 1996.) To order, select one feature set (there is no default) and order as many of the optional feature licenses as needed.

For details about how to order Cisco 7200 series software updates and upgrades, see the section “Software Ordering Examples” in the chapter “Cisco IOS Software.”

Table 97 list the feature sets for Cisco IOS Release 11.1, Table 98 lists feature set product numbers, Table 99 lists optional feature set licenses and their product numbers, and Table 100 lists feature set upgrade product numbers.

Table 97 Cisco IOS Release 11.1 Feature Sets—Cisco 7200 Series

Category	Network Layer 3 Switching	Desktop and IBM	Enterprise[1]
LAN support	IP, transparent and translational bridging[2], concurrent routing and bridging[3], multiring, LAN extension host, ISL, Novell IPX	IP, transparent and translational bridging[2], concurrent routing and bridging[3], multiring, LAN extension host, GRE, Novell IPX, AppleTalk 1 and 2, DECnet IV	IP, transparent and translational bridging[2], concurrent routing and bridging[3], multiring, LAN extension host, GRE, Novell IPX, AppleTalk 1 and 2, DECnet IV, DECnet V, OSI, XNS, Banyan VINES, Apollo Domain
WAN services	–	HDLC, PPP,[4] ISDN[5], IPXWAN 2.0	HDLC, PPP[4], ISDN[5], IPXWAN 2.0
WAN optimization	–	Header, link and payload compression,[6] dial-on-demand, dial backup, bandwidth-on-demand, custom and priority queuing, weighted fair queuing, snapshot routing	Header, link and payload compression,[6] dial-on-demand, dial backup, bandwidth-on-demand, custom and priority queuing, weighted fair queuing, snapshot routing
IP routing	RIP, RIPv2, IGRP, Enhanced IGRP, OSPF, PIM, NHRP, policy-based routing	RIP, RIPv2, IGRP, Enhanced IGRP, OSPF, PIM, NHRP, policy-based routing	RIP, RIPv2, IGRP, Enhanced IGRP, OSPF, PIM, NHRP, policy-based routing, ES-IS, IS-IS
Other routing	IPX RIP, NLSP, RTMP, AURP, SMRP	IPX RIP, NLSP, RTMP, AURP, SMRP	IPX RIP, NLSP, RTMP, AURP, SMRP, SRTP
Management	AutoInstall, SNMP, RMON events and alarms[7], Telnet, automatic modem configuration	AutoInstall, SNMP, RMON events and alarms[7], Telnet, automatic modem configuration	AutoInstall, SNMP, RMON events and alarms[7], Telnet, automatic modem configuration

Category	Network Layer 3 Switching	Desktop and IBM	Enterprise[1]
Security	Access lists, extended access lists, access security, TACACS+, RADIUS, MD5 routing authentication, Lock and Key	Access lists, extended access lists, access security, TACACS+, RADIUS, MD5 routing authentication, Lock and Key	Access lists, extended access lists, access security, TACACS+, RADIUS, MD5 routing authentication, Lock and Key, Kerberized login
IBM support	–	SRB/RSRB, SRT, DLSw[8]+, SNA and NetBIOS WAN optimization via local acknowledgment, caching and filtering, SDLC integration, SDLC-to-LAN conversion (SDLLC), SDLC transport (STUN), Frame Relay SNA Support (RFC 1490), QLLC, NetView Native Service Point, BAN for SNA Frame Relay Support	SRB/RSRB, SRT, DLSw+[8], SNA and NetBIOS WAN optimization via local acknowledgment, caching and filtering, SDLC integration, SDLC-to-LAN conversion (SDLLC), SDLC transport (STUN), Frame Relay SNA Support (RFC 1490), BAN for SNA Frame Relay Support, TG/COS, QLLC, NetView Native Service Point Downstream PU Concentration (DSPU) Optional[9]: APPN

1. Also available with APPN. Use the product numbers that specify APPN in the "Cisco 7200 Series" chapter.
2. See the category "IBM support" for information about source route-bridging (SRB).
3. The concurrent routing and bridging feature only applies to transparent bridging, not SRB.
4. PPP includes support for LAN protocols supported by the feature set, address negotiation, PAP, and CHAP authentication, and PPP compression.
5. ISDN support includes calling line identification (ANI), X.25 over B channel, ISDN subaddressing, and applicable WAN optimization features. Asynchronous ISDN Access (V1.20) is only supported in the Enterprise feature set.
6. X.25 and Frame Relay payload compression.
7. Supported on all interfaces.
8. DLSw+ over TCP/IP is supported.
9. "Optional" means a separate Cisco IOS feature set: Enterprise/APPN.

Table 98 Cisco IOS Software Product Numbers—Cisco 7200 Series

Description	Product Number
Enterprise	SF-G72A-11.1.x[1] SW-G72A-11.1.x=
Enterprise, APPN[2]	SF-G72AN-11.x SW-G72AN-11.x=
Desktop and IBM	SF-G72DS-11.1.x SW-G72DS-11.1.x=
Network Layer 3 switching	SF-G72R-11.1.x SW-G72R-11.1.x=

1. Where x represents the current maintenance release number. Requires Cisco IOS Release 11.1(472) or later.
2. See "DRAM Guidelines" in the chapter "Configuration Guidelines for the Cisco 7000 Family."

Table 99 Cisco IOS Release 11.1 Feature Licenses—Cisco 7200 Series

Category	Features	Product Number
WAN packet protocols	X.25, X.25 switching, Frame Relay, SMDS, Frame Relay switching, Switched 56, ATM DXI, SMDS over ATM	FR-WPP72, FR-WPP72=
Interdomain routing	BGP, EGP for Internet scale routing	FR-IR72, FR-IR72=
NetFlow[1]	NetFlow software	FR-NF72, FR-NF72=

1. Available Q3 1996.

Table 100 Cisco IOS Software Upgrades—Cisco 7200 Series

Feature Set Upgrade	Product Number
Desktop, IBM to Enterprise (Cisco IOS Release 11.1)	SW-G72BSA-11.1.x=[1]
IP to Desktop, IBM (Cisco IOS Release 11.1)	SW-G72CDS-11.1.x=
IP to Enterprise (Cisco IOS Release 11.1)	SW-G72CA-11.1.x=

1. Where x represents the current maintenance release number. Requires Cisco IOS Release 11.1(472) or later